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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/810,846 | 03/16/2001 | Masahide Tsukamoto | 10873.675US01 | 7077 |

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EXAMINER

NORRIS, JEREMY C

ART UNIT PAPER NUMBER

2827

DATE MAILED: 06/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/810,846

Applicant(s)

TSUKAMOTO ET AL.

Examiner

Jeremy Norris

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AC

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24, 26-28, 30-33 is/are rejected.
- 7) ☒ Claim(s) 25 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to because the sectional views are not properly cross-hatched (see MPEP 608.02). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-7, 9-23, 26-27, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Maruyama et al (US 6,323,440).

Maruyama et al (hereafter Maruyama) disclose, referring to figures 9a-c, a fixture, comprising: a base (15) with an opening in its center portion; a movable pawl (30, 31) provided on the base for fixing an electronic component (32); and at least one pair of positioning walls for positioning the electronic component wherein the at least one pair of positioning walls are inner wall faces of the base [claim 1], wherein the movable pawl is supported by the base through a thin-wall part having a relatively thin wall thickness

so as to be in an elastically displaceable state [claim 2], wherein a wall thickness of the base is thicker than that of the thin-wall part [claim 3], wherein the thin-wall part has across-sectional shape bent or curved in a substantially C-, J-, or V-shaped form [claim 4], wherein the base has a substantially rectangular frame-like planar shape with an opening in its center portion [claim 5], wherein the movable pawl is formed at least on one side of four sides excluding four corners [claim 6], wherein a slope with its lower end located on a side of the opening is formed on an upper portion of the movable pawl [claim 7], wherein an end face of the movable pawl functions as the at least one pair of positioning walls [claim 9], wherein the movable pawl and the at least one pair of positioning walls are formed of an insulating material [claim 10], wherein the base, the movable pawl, and the at least one pair of positioning walls are formed integrally using the same material [claim 11].

Additionally, Maruyama discloses, a circuit board with a fixture, comprising; a fixture mounted on a circuit board, for placing an electronic component; and electrodes (16) formed on the circuit board with the fixture, wherein the fixture comprises a movable pawl (30, 31) for fixing an electronic component (32) and at least one pair of positioning walls for positioning an electronic component, the at least one pair of positioning walls are inner wall faces of the fixture, and the electrodes are exposed between the at least one pair of positioning walls [claim 12], wherein the movable pawl is supported through a thin-wall part having a relatively thin wall thickness so as to be in an elastically displaceable state [claim 13], wherein the fixture is fixed to the circuit board by adhering thereto by its bottom face, and a wall thickness of the fixture at the bottom face is

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thicker than that of the thin-wall part [claim 14], wherein the thin-wall part has a cross-sectional shape bent or curved in a substantially C-, J-, or V-shaped form [claim 15], wherein the fixture has a substantially rectangular frame-like planar shape with an opening in its center portion [claim 16], wherein the movable pawl is formed at least on one side of four sides excluding four corners [claim 17], wherein a slope with its lower end located on a side where the electronic component is positioned is formed on an upper portion of the movable pawl [claim 18], wherein the circuit board with a fixture has a first surface provided with the fixture and the electrodes and a second surface opposite to the first surface, and electrodes connected to the electrodes formed on the first surface are formed on the second surface (see figure 13) [claim 19].

Moreover, Maruyama discloses an electronic-component mounted body, comprising: a circuit board with electrodes; a fixture; and an electronic component with electrodes, the electronic component being placed on the circuit board using the fixture, and bumps (near reference character 51) formed on the electrodes of the electronic component or on the electrodes on the circuit board, wherein the fixture comprises a movable pawl and at least one pair of positioning walls, the movable pawl fixes the electronic component to the circuit board, the at least one pair of positioning walls control a position of the electronic component in a direction parallel to a surface of the circuit board with the electronic component placed therebetween, and the electrodes of the electronic component are connected to the electrodes on the circuit board formed between the at least one pair of positioning walls (see figure 15) [claim 20], wherein the at least one pair of positioning walls are inner wall faces of the fixture [claim 30],

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wherein the movable pawl presses the electronic component toward the circuit board [claim 21], wherein the electronic component is a semiconductor chip (see col. 5, lines 64-end) [claim 22], wherein the electrodes of the electronic component and the electrodes on the circuit board are connected to each other with a conductive adhesive (solder) interposed therebetween [claim 23], further comprising a fixing plate with a larger outer dimension than that of the electronic component, wherein the fixing plate is attached to the electronic component, the movable pawl indirectly fixes the electronic component through the fixing plate, and the at least one pair of positioning walls indirectly control a position of the electronic component through the fixing plate [claim 26], wherein the fixing plate and the at least one pair of positioning walls are formed to have shapes engaging with each other, and with the shapes, a position of the fixing plate is controlled and/or the fixing plate is fixed [claim 27].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 28 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruyama.

Regarding claim 28, Maruyama discloses the claimed invention except Maruyama doesn't specifically state a slope is formed at a periphery of a lower face of the fixing plate. However, it would have been an obvious matter of design choice, to one having ordinary skill in the art, at the time of invention, to form such a slope. Furthermore, it has been held that more than a mere change of form is necessary for patentability. *Span-Deck, Inc v. Fab-Con, Inc.* (CA 8, 1982) 215 USPQ 835.

Regarding claims 31-33, Maruyama discloses the claimed invention except for the limitations of a continuity test and subsequent underfilling and sealing. However, it would have been obvious, to one having ordinary skill in the art, at the time of invention, to take these steps with the invention of Maruyama. The motivations for doing so would have been to ensure proper electrical connection and protection of the connection to ensure a more reliable device.

Allowable Subject Matter

The indicated allowability of now cancelled claims 8 and 24 is withdrawn. The indication of allowable subject matter in paper # 4, regarding the limitations recited in the claims was an inadvertent error by the Examiner. The subject matter of those claims is anticipated by the prior art as described above.

Claims 25 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claim 25 states the limitation "wherein the bumps and the electrodes on which the bumps are not formed are connected to each other with an adhesive interposed therebetween". This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art. Claim 29 states the limitation "wherein the fixing plate is attached to the electronic component with an elastic adhesive layer interposed therebetween". This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Norris whose telephone number is 703-306-5737. The examiner can normally be reached on Mon.-Th., 9AM - 6:30 PM and alt. Fri. 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7724 for regular communications and 703-305-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JCSN

May 30, 2002

A handwritten signature in black ink, appearing to read 'Kamand Cuneo', is written over the printed name and title.

KAMAND CUNEO
PRIMARY EXAMINER